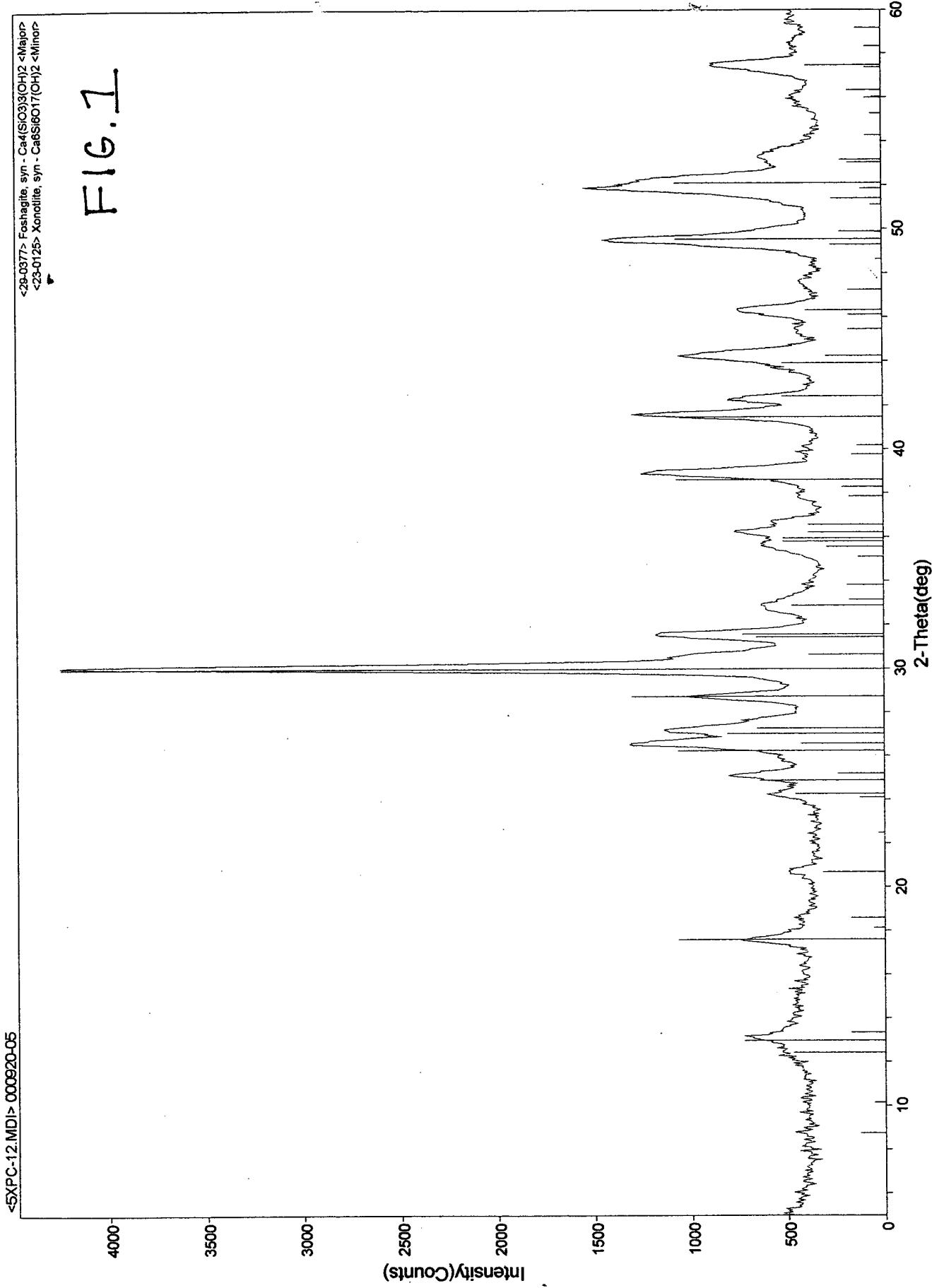


FIG. 1

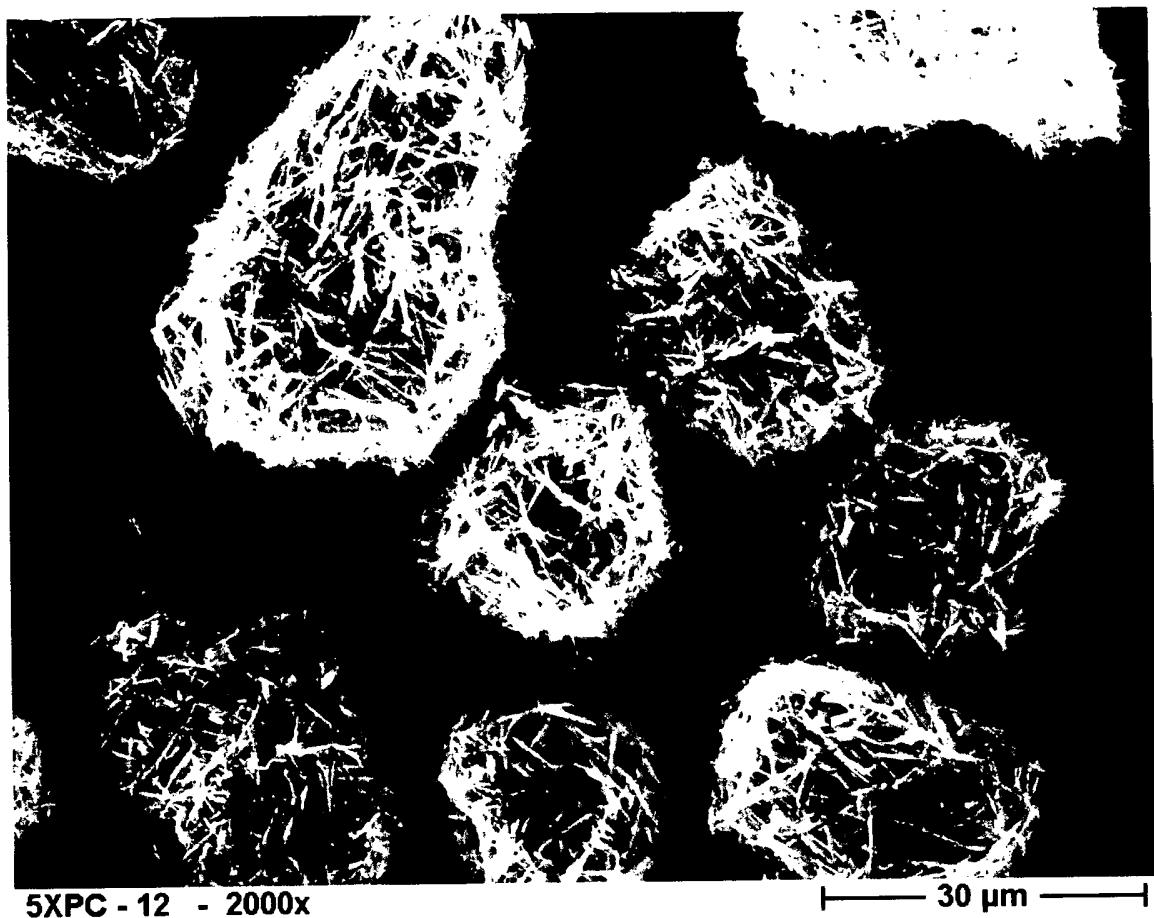


Docket No.: GR1-2790-U Sheet 1 of 34
Serial No.: 09/649,413 Filing Date: 08/26/2000
Applicant: MATHUR, Vijay K.
Title: MULTI-PHASE CALCIUM SILICATE HYDRATES,
METHODS FOR THEIR PREPARATION, et al
CALL: R. Reams Goodloe, Jr.
Phone: (253) 859-9128/ Reg. #32,466/ Cust#20793

FIG. 2



FIG. 3



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Serial No.: 09/49,413 Filing Date: 08/26/2000
Applicant: MATHUR, Vijay K.
Title: MULTI-PHASE CALCIUM SILICATE HYDRATES,
Methods for their Preparation, et al
Cited: R. Reams Goodloe, Jr.
Phone: (253) 859-9128 / Reg. #32,466 / Cust#20793

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FIG. A

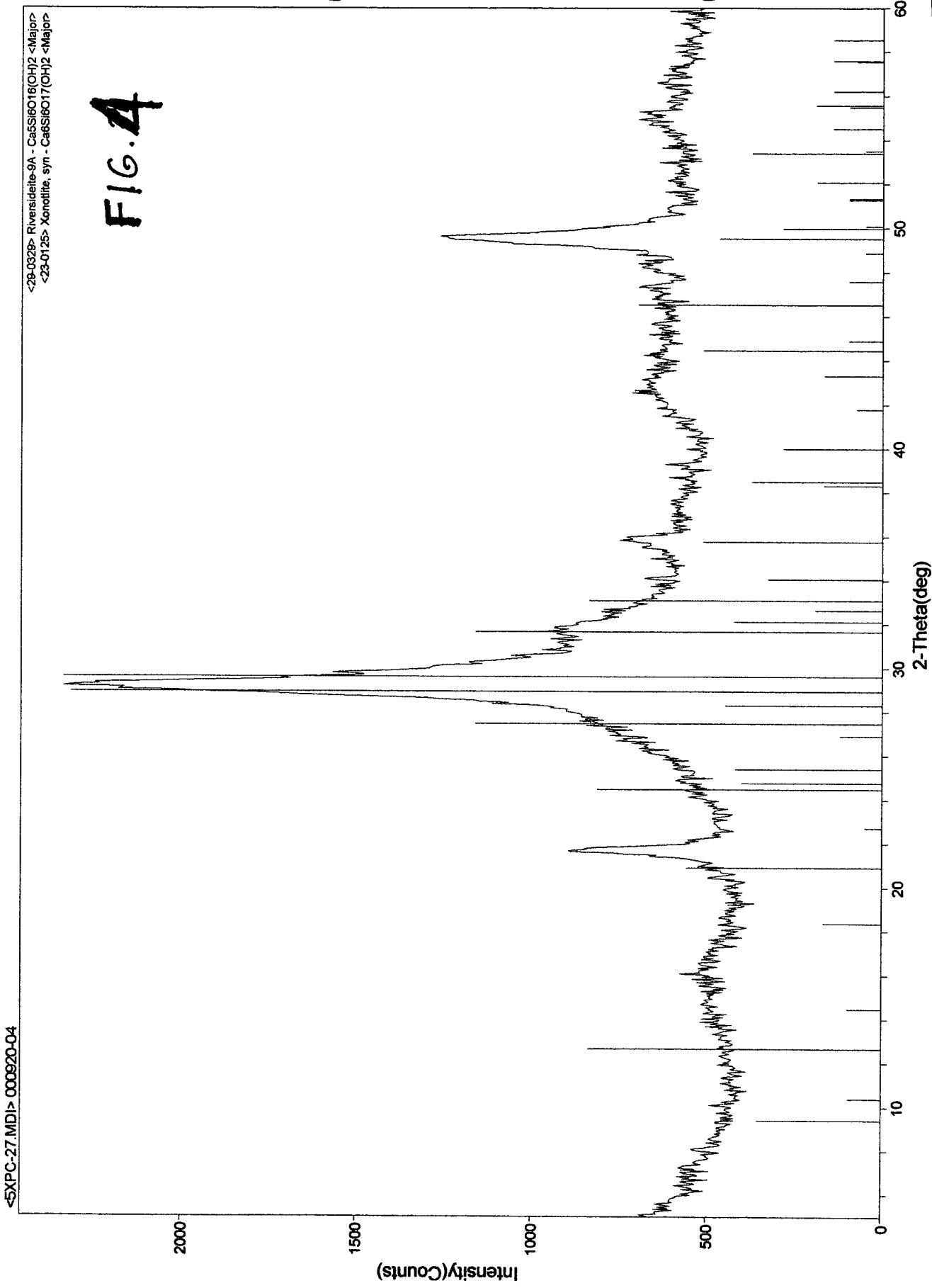
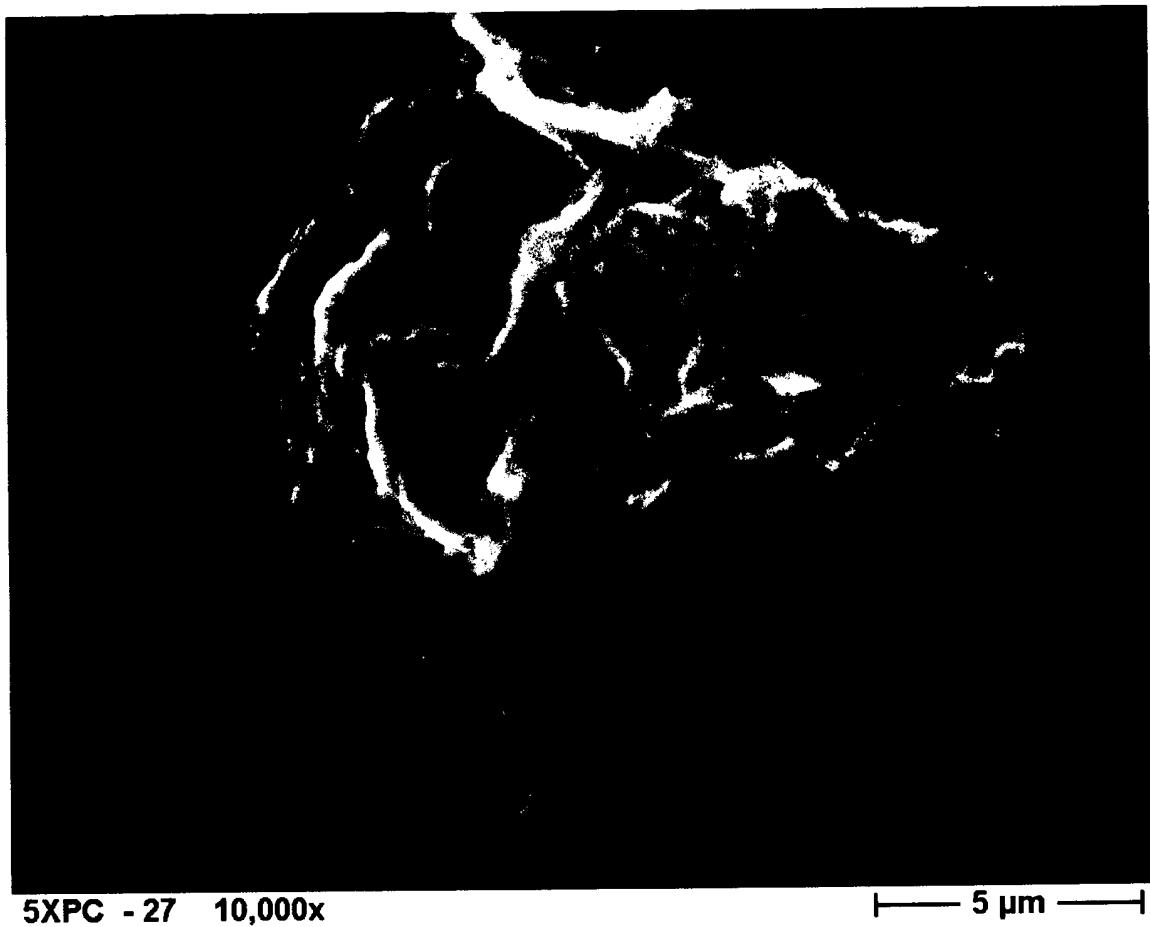
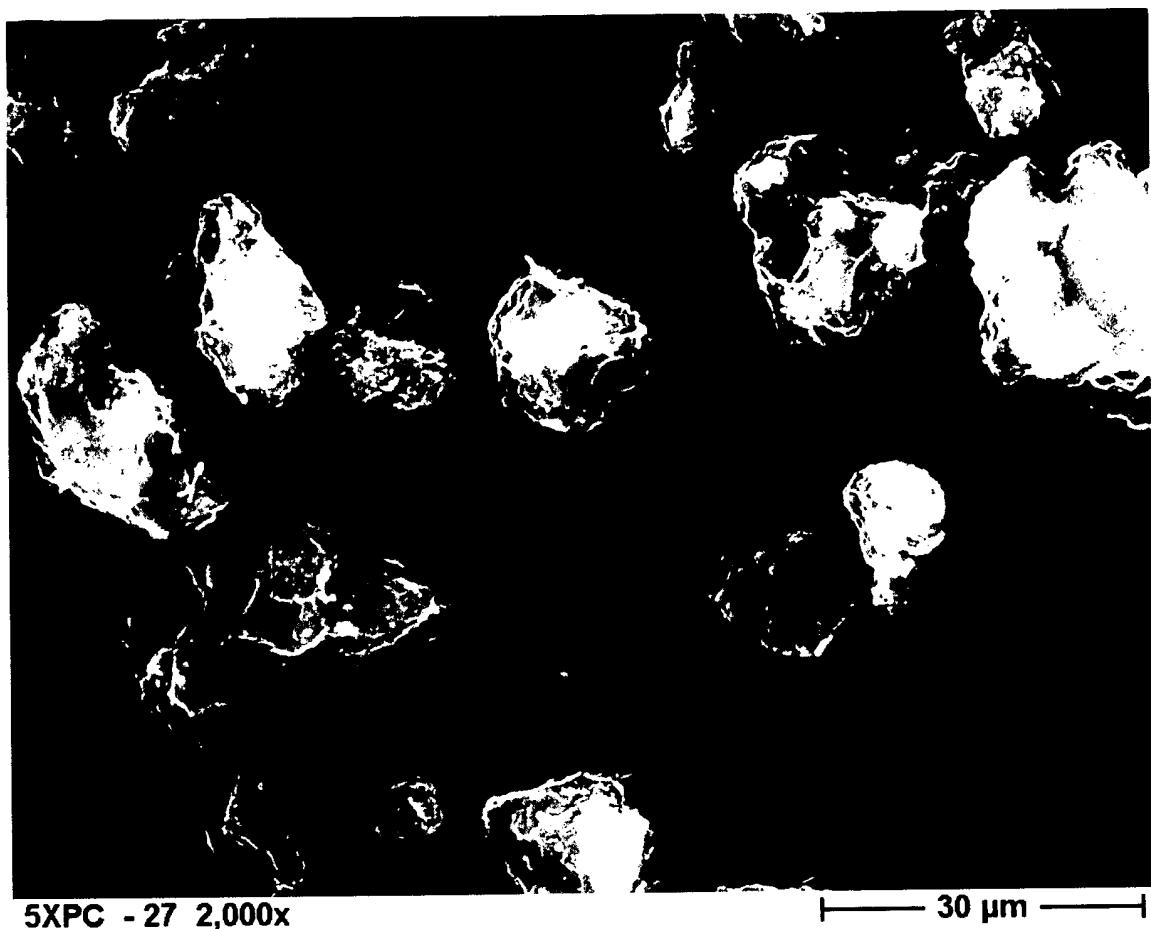


FIG. 5



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Serial No.: 09/649,413 Filing Date: 08/26/2000
Applicant: MATHUR, Vijay K.
Title: MULTI-PHASE CALCIUM SILICATE HYDRATES,
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CADD: R. Reams Goodloe, Jr.
Phone: (253) 859-9128/ Reg. #32,466/ Cust#20793

FIG. 6



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Serial No.: 09/649,413 Filing Date: 08/26/2000
Applicant: MATHUR, Vijay K.
Title: MULTI-PHASE CALCIUM SILICATE HYDRATES,
Methods for Their Preparation, et al
Call: R. Reams Goodloe, Jr.
Phone: (253) 859-9128 / Reg. #32,466 / Cus#20793

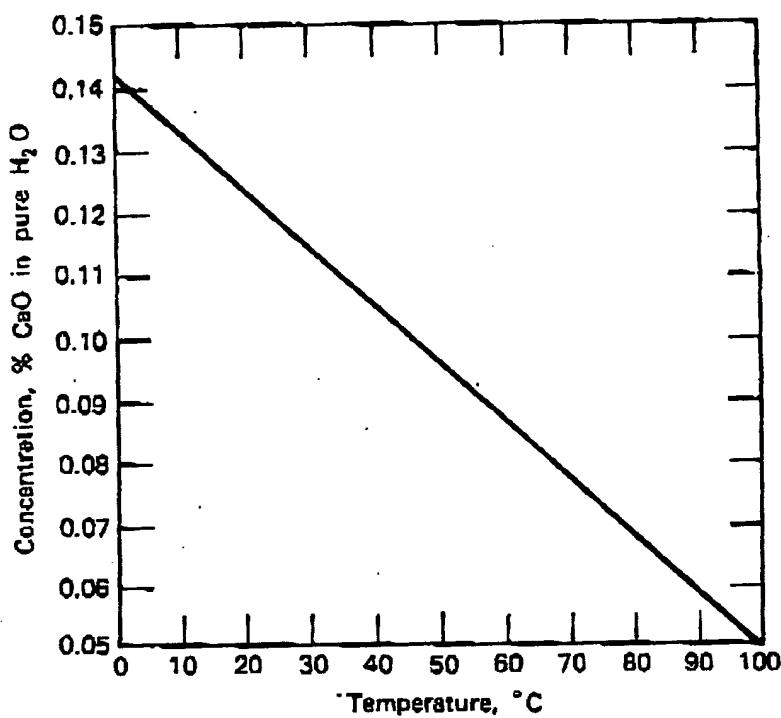


Figure 7: Solubility of lime in water

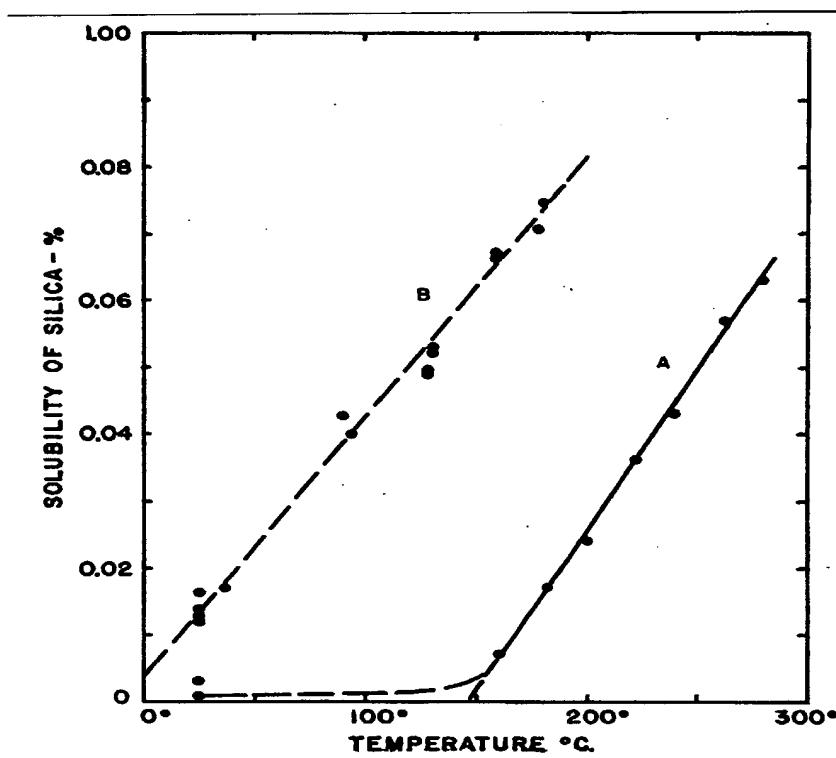


Figure 8: Solubility of silica in water

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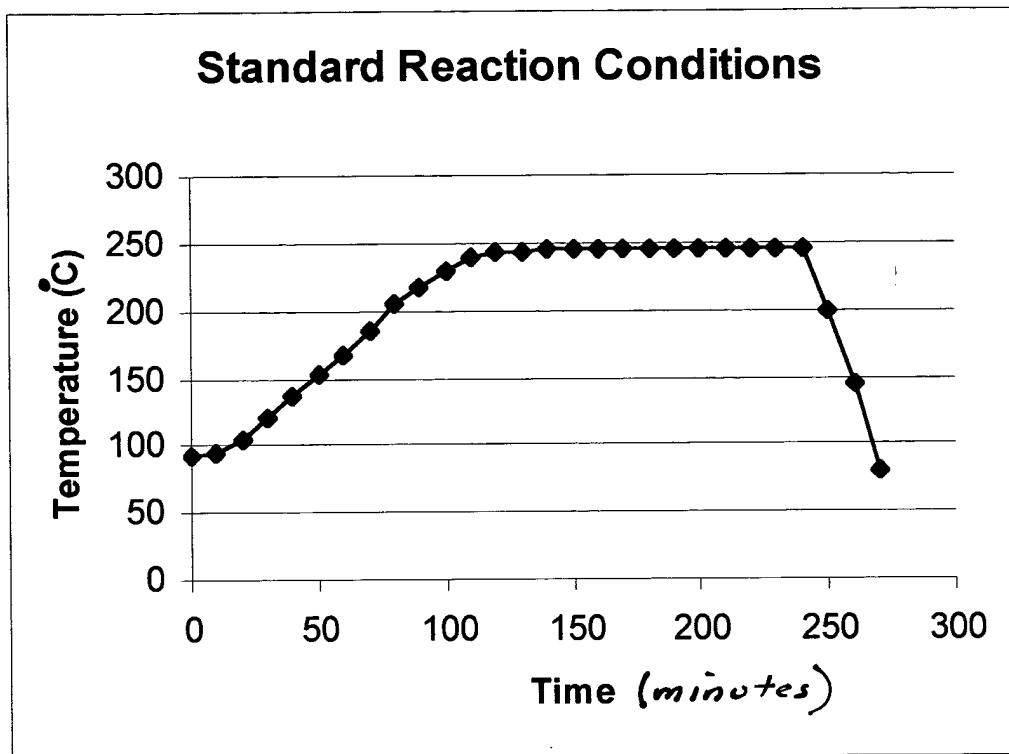


Figure 9: Heating/cooling cycle for a standard reaction

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Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate: PCC(HO)

Sheet Brightness

TiSil vs. PCC

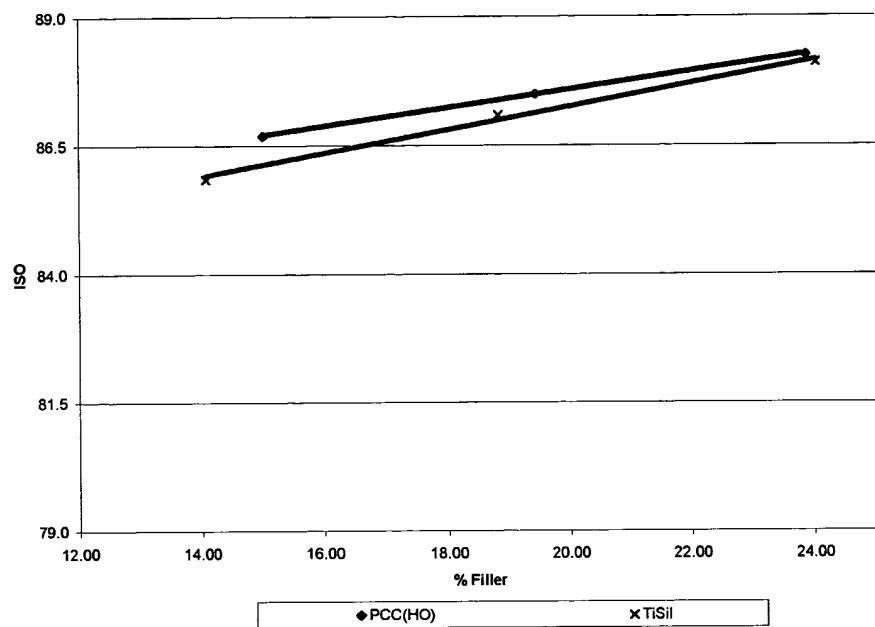


Fig 10: Sheet Brightness results for TiSil and PCC(HO)

Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate: PCC(HO)

Sheet Opacity

TiSil vs. PCC

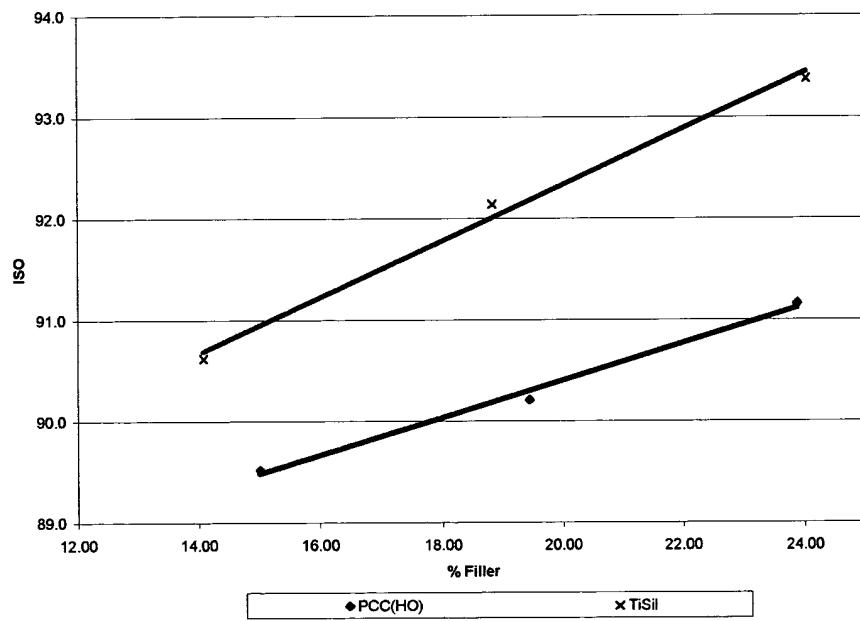


Fig 11: Sheet Opacity results for TiSil and PCC(HO)

Calcium Silicate Hydrate: TiSil
 Commercial Calcium Carbonate: PCC(HO)

Sheet Scattering Coefficient

TiSil vs. PCC

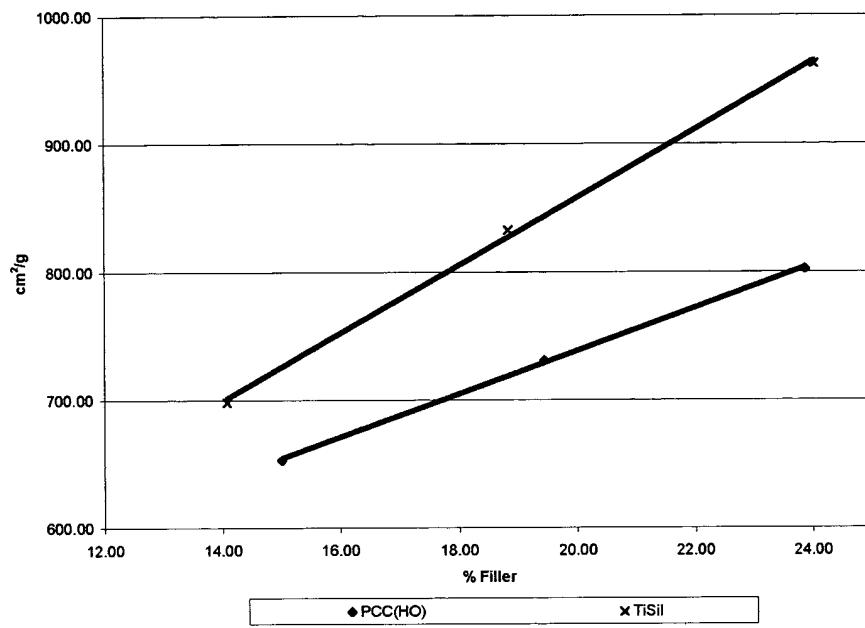


Fig 12: Sheet Scattering Coefficient results for TiSil and PCC(HO)

Calcium Silicate Hydrate: TiSil
 Commercial Calcium Carbonate: PCC(HO)

Filler Scattering Coefficient

TiSil vs. PCC

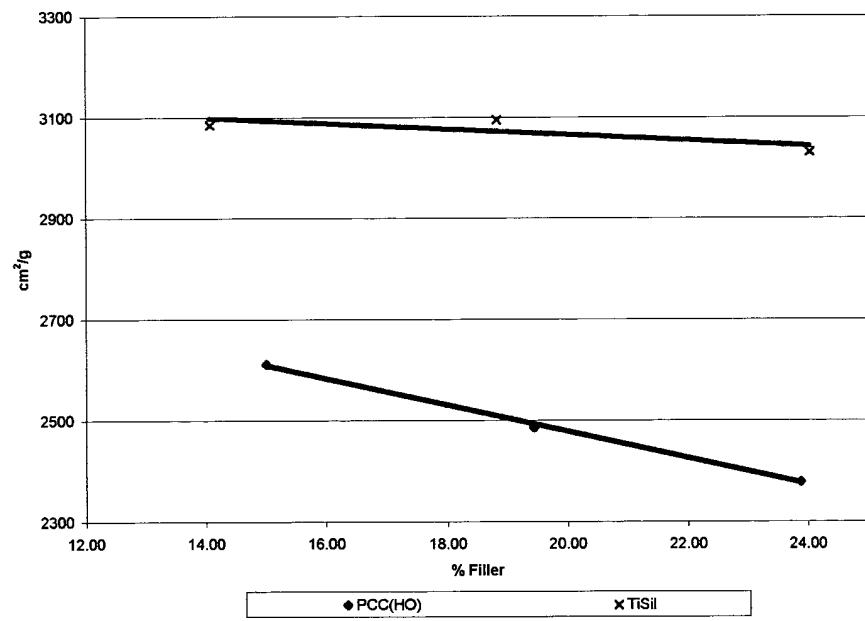


Fig 13: Filler Scattering Coefficient results for TiSil and PCC(HO)

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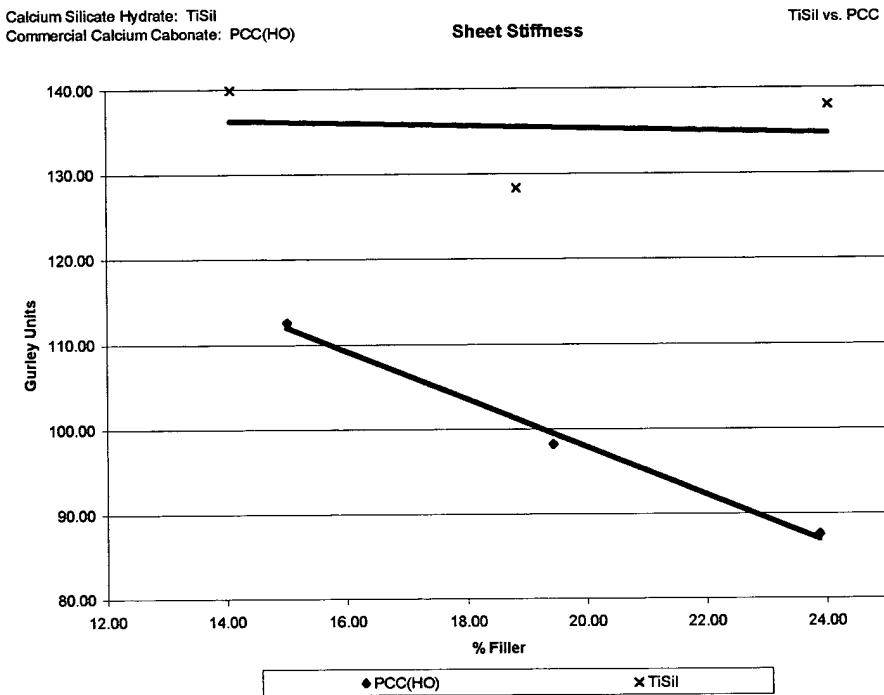


Fig 14: Sheet Stiffness results for TiSil and PCC(HO)

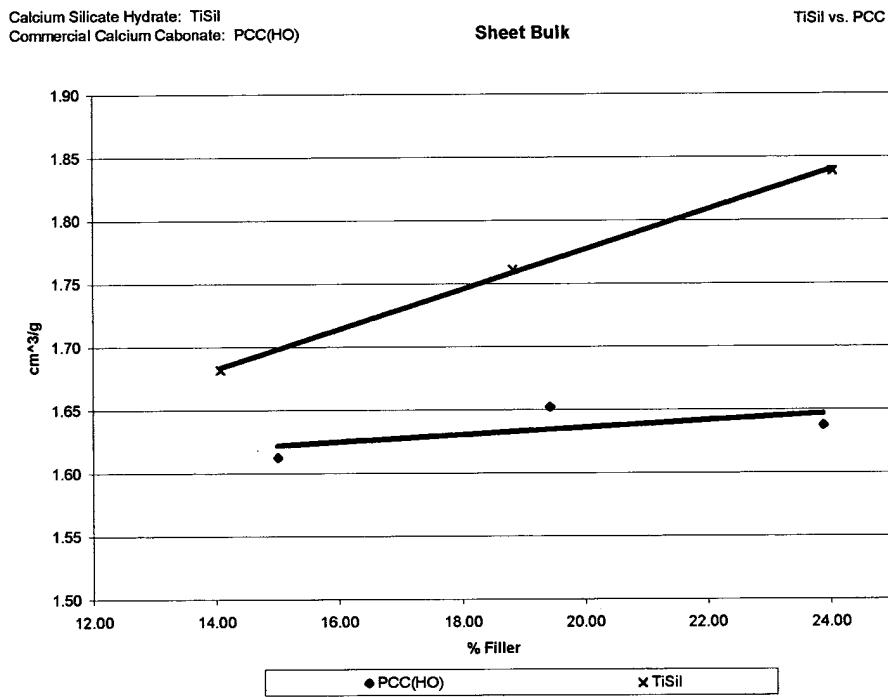


Fig 15: Sheet Bulk results for TiSil and PCC(HO)

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Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate: PCC(HO)

Sheet Porosity

TiSil vs. PCC

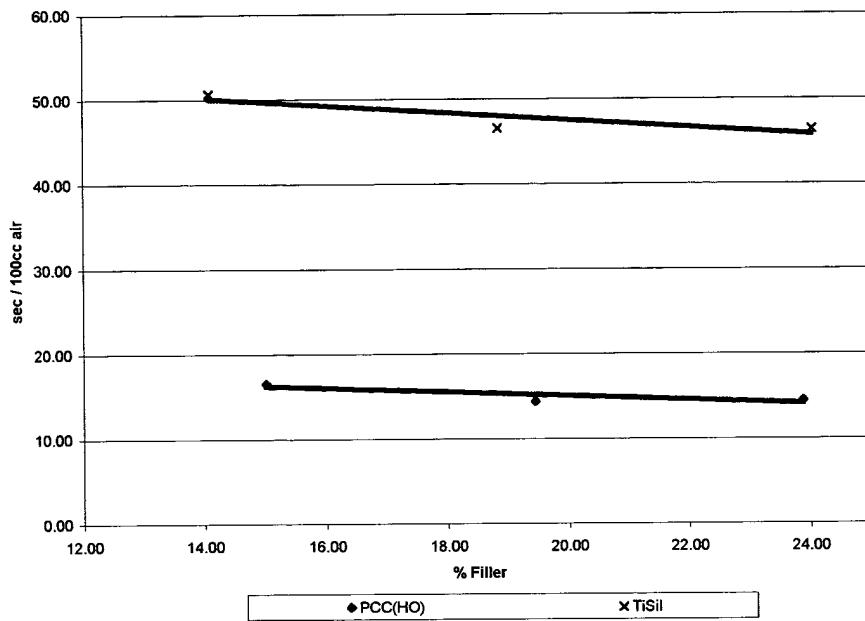


Fig 16: Sheet Porosity results for TiSil and PCC(HO)

Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate: PCC(HO)

TiSil vs. PCC

Sheet Tensile Index

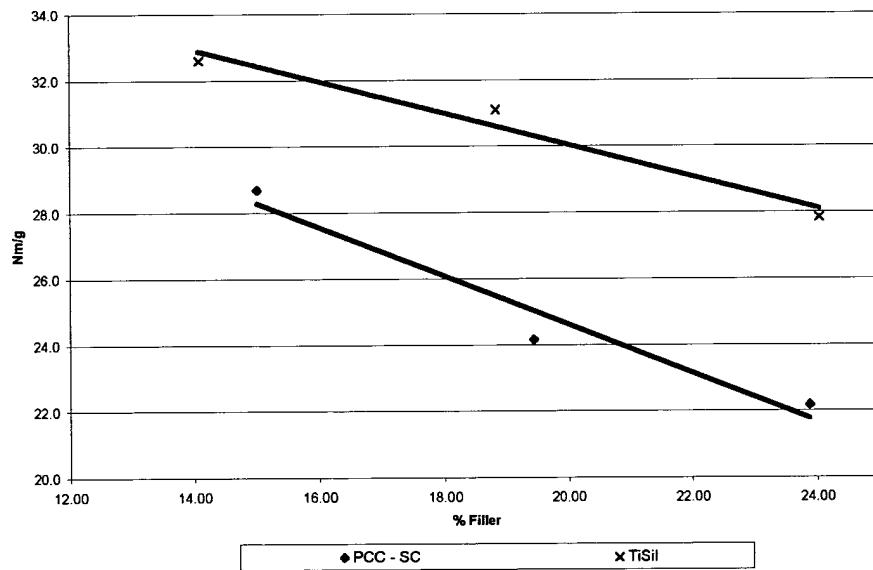


Fig 17: Sheet Tensile Index results for TiSil and PCC(HO)

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Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

Sheet Brightness

TiSil vs. PCC w/TiO₂

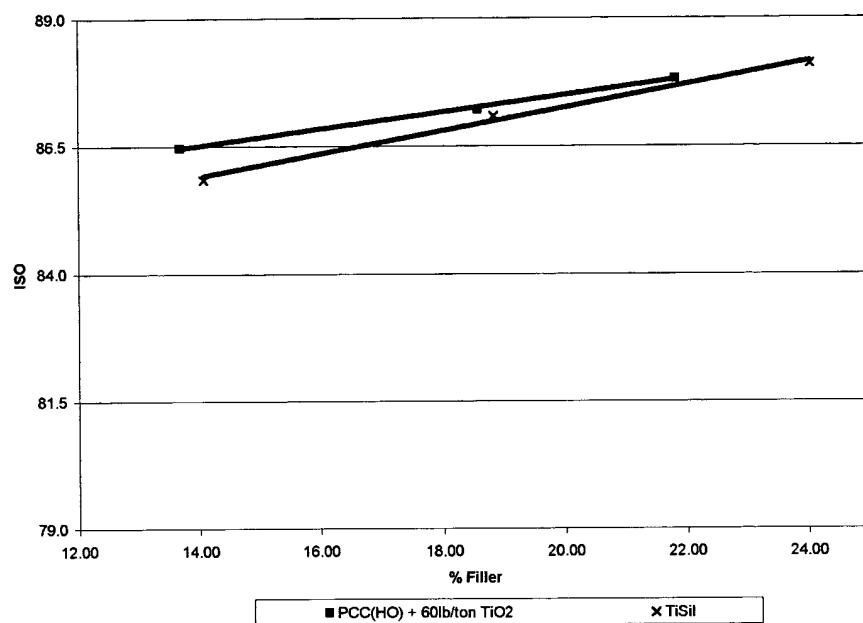


Fig 18: Sheet Brightness results for TiSil and PCC(HO) w/TiO₂

Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

Sheet Opacity

TiSil vs. PCC w/TiO₂

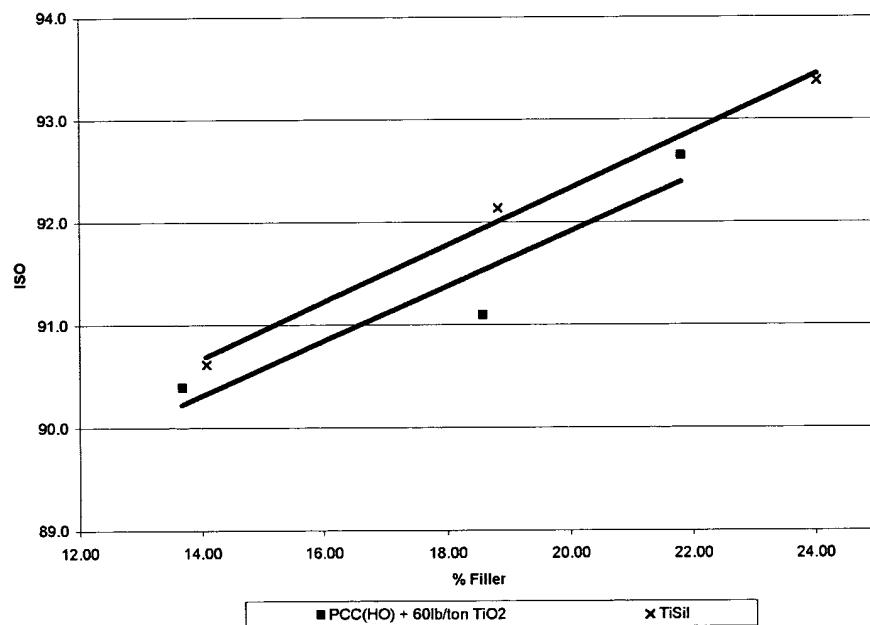


Fig 19: Sheet Opacity results for TiSil and PCC(HO) w/TiO₂

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Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

Sheet Scattering Coefficient

TiSil vs. PCC w/TiO₂

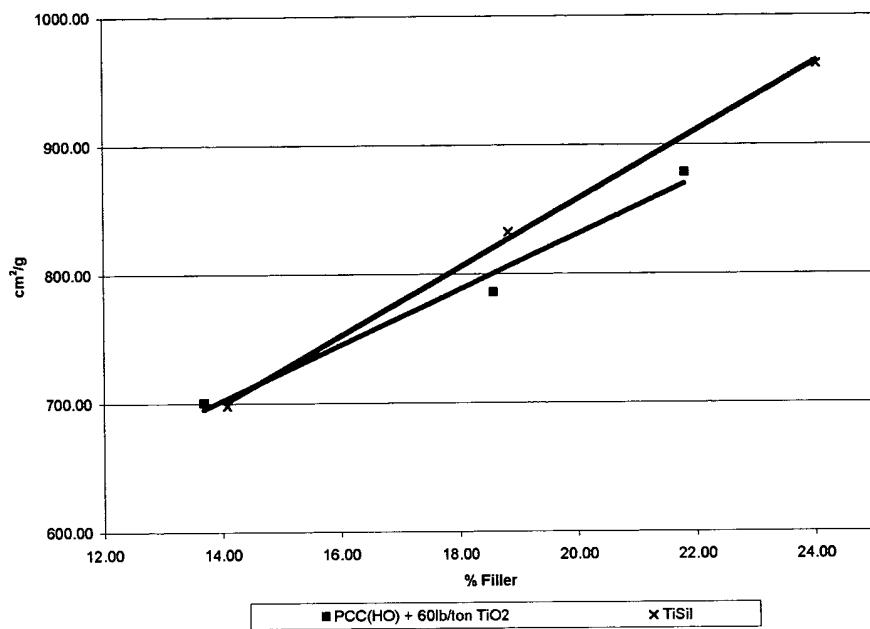


Fig 20: Sheet Scattering Coefficient results for TiSil and PCC(HO) w/TiO₂

Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

Filler Scattering Coefficient

TiSil vs. PCC w/TiO₂

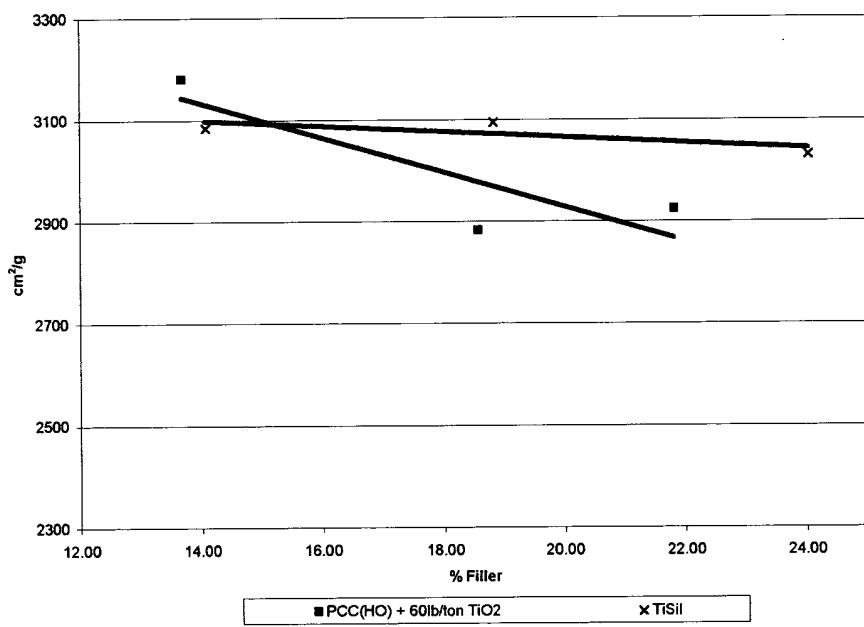


Fig 21: Filler Scattering Coefficient results for TiSil and PCC(HO) w/TiO₂

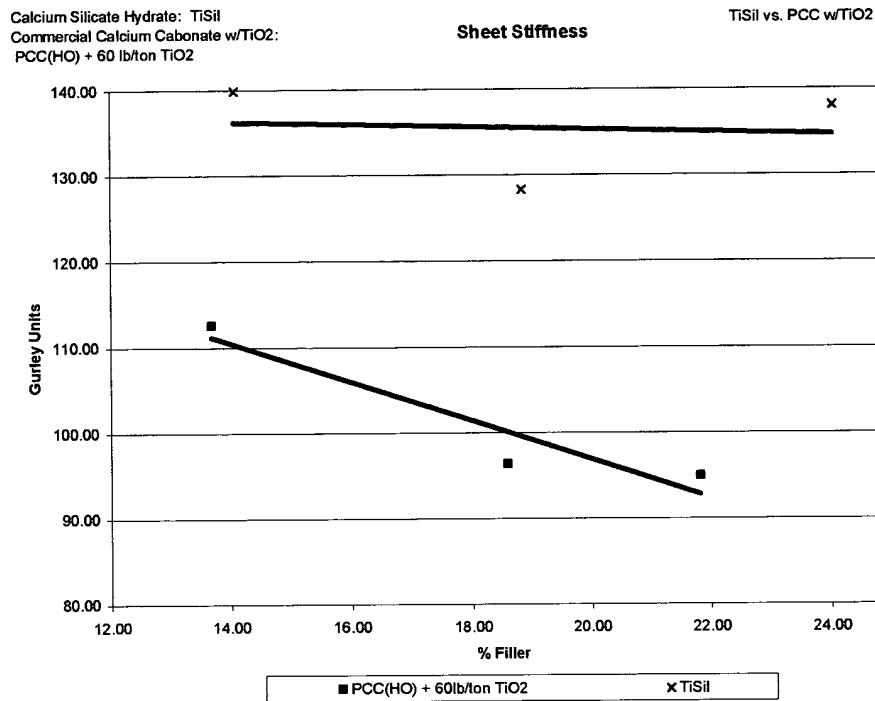


Fig 22: Sheet Stiffness results for TiSil and PCC(HO) w/TiO₂

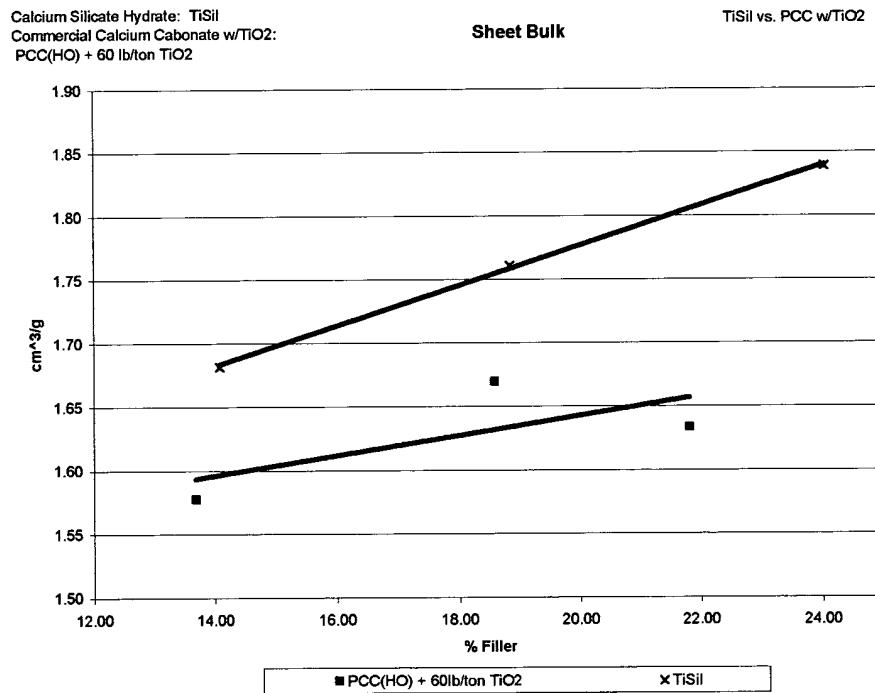


Fig 23: Sheet Bulk results for TiSil and PCC(HO) w/TiO₂

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Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

Sheet Porosity

TiSil vs. PCC w/TiO₂

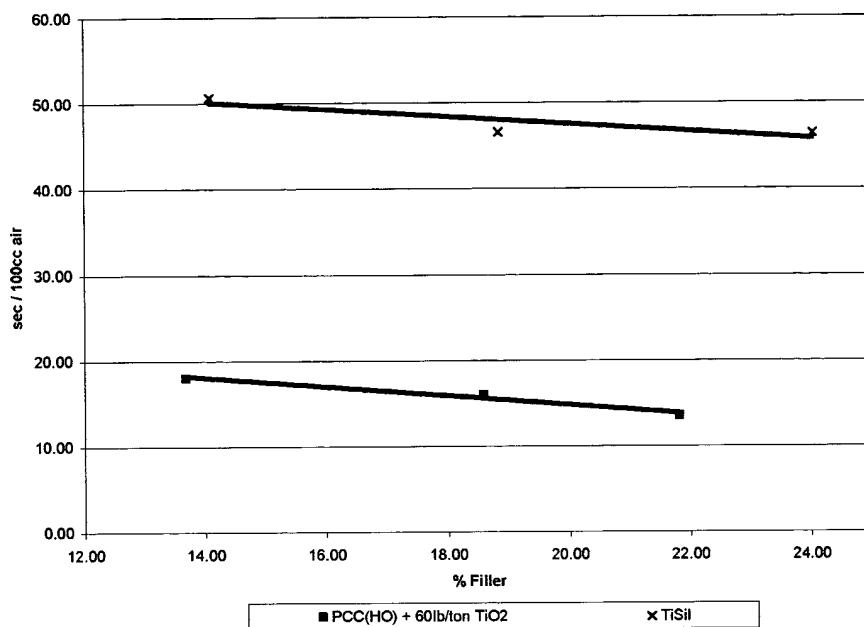


Fig 24: Sheet Porosity results for TiSil and PCC(HO) w/TiO₂

Calcium Silicate Hydrate: TiSil
Commercial Calcium Carbonate w/TiO₂:
PCC(HO) + 60 lb/ton TiO₂

TiSil vs. PCC w/TiO₂

Sheet Tensile Index

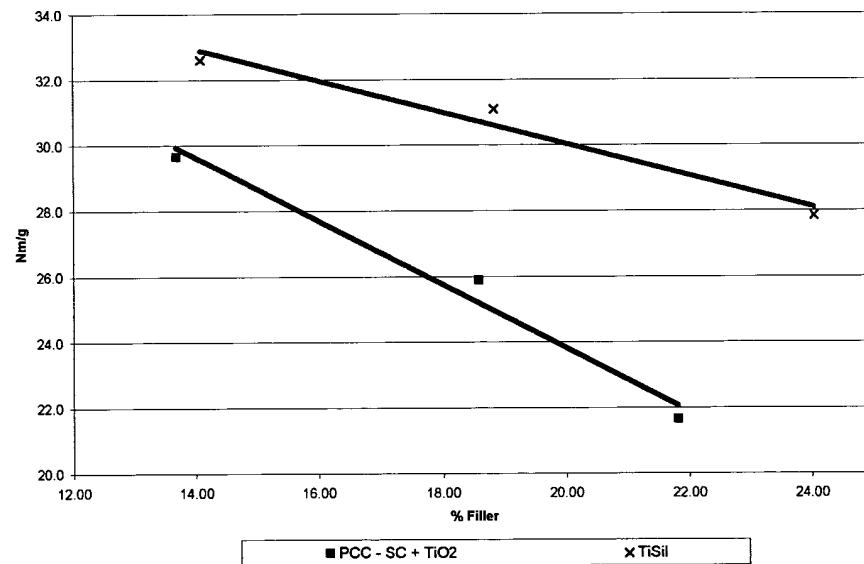


Fig 25: Sheet Tensile Index results for TiSil and PCC(HO) w/TiO₂

Calcium Silicate Hydrate: TiSil
 Commercial Calcium Silicate: Bulkite

Sheet Opacity

TiSil vs. Bulkite

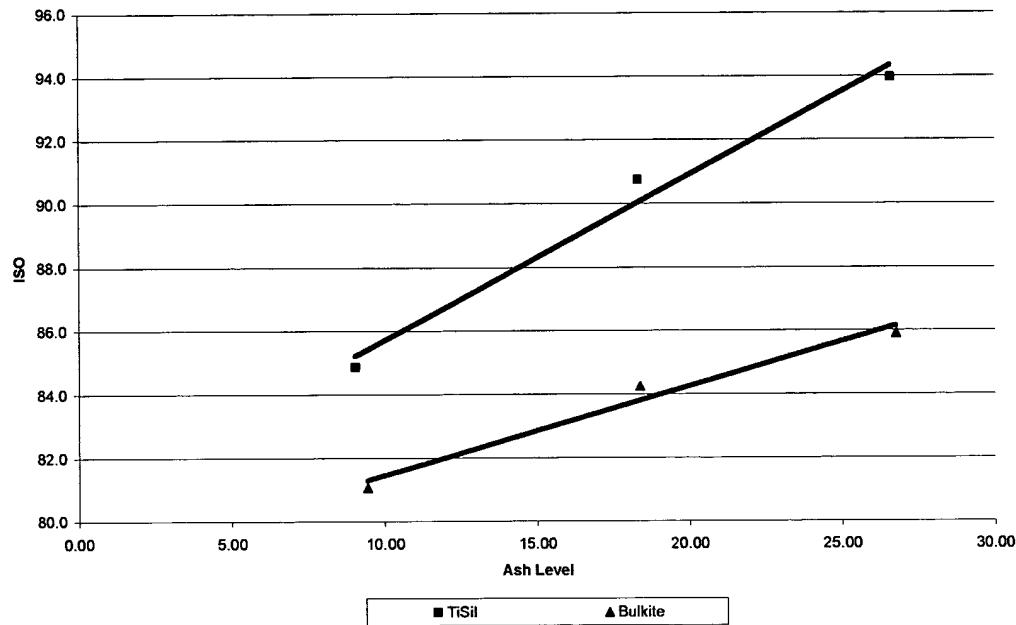


Fig 26: Sheet Opacity results for TiSil and Bulkite

Calcium Silicate Hydrate: TiSil
 Commercial Calcium Silicate: Bulkite

Sheet Scattering Coefficient

TiSil vs. Bulkite

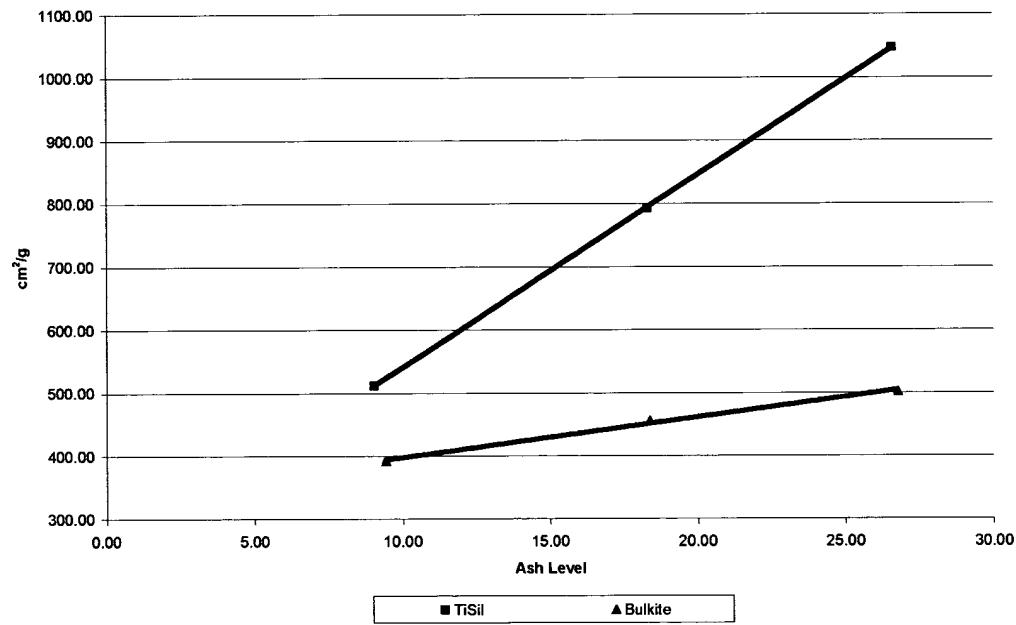


Fig 27: Sheet Scattering Coefficient results of TiSil and Bulkite

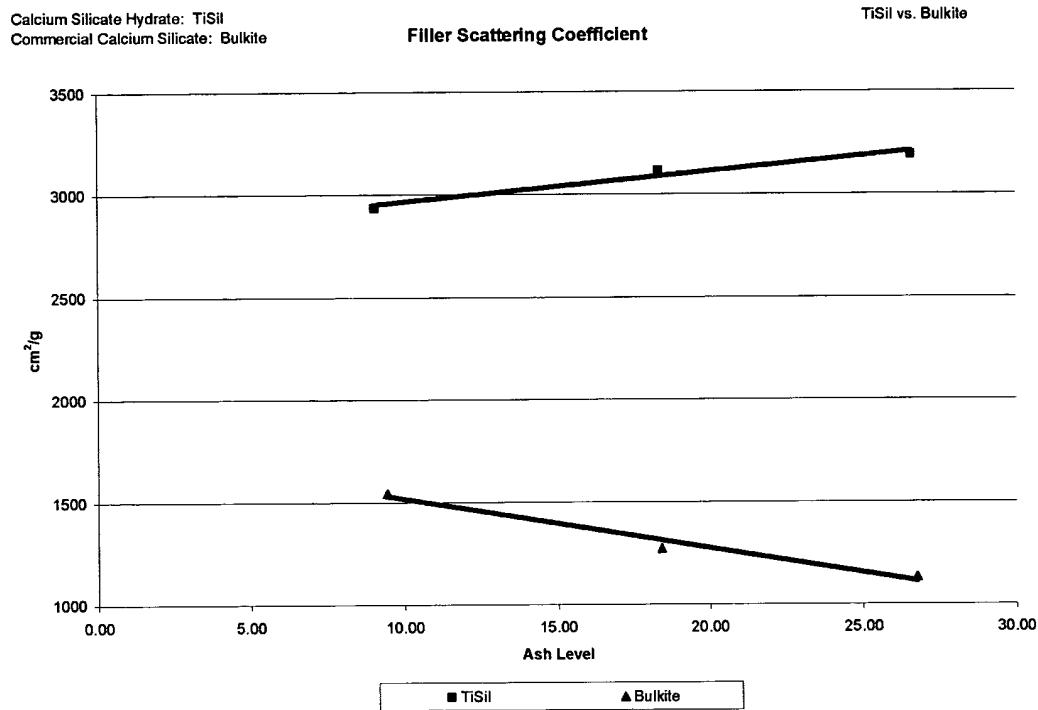


Fig 28: Filler Scattering Coefficient results for TiSil and Bulkite

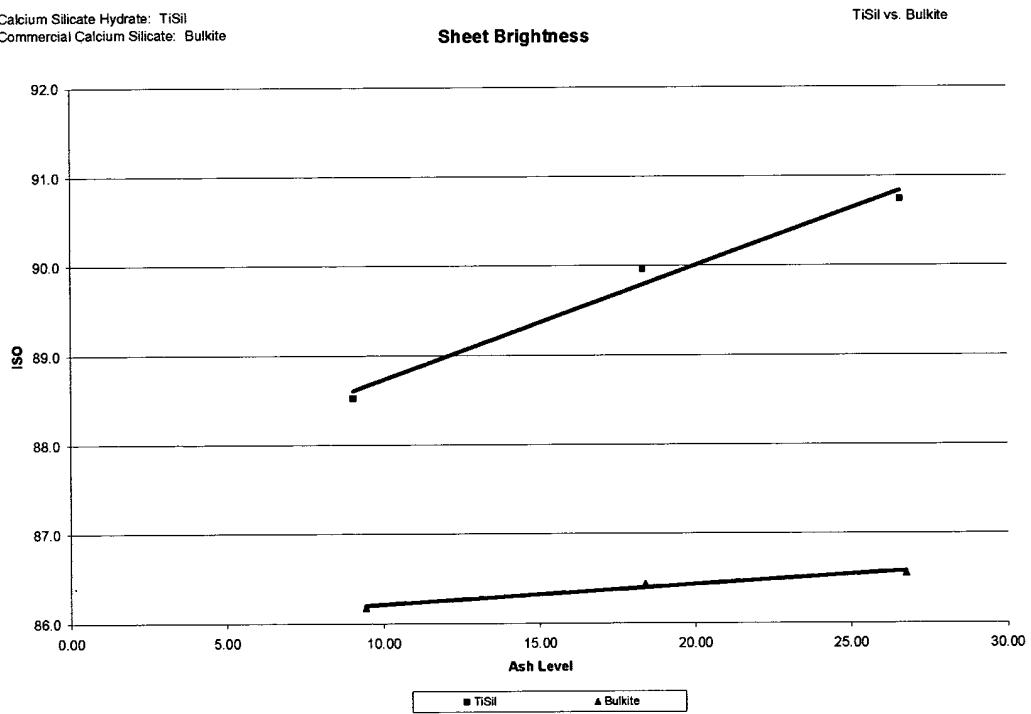


Fig 29: Sheet Brightness results for TiSil and Bulkite

Calcium Silicate Hydrate: TiSil
Commercial Calcium Silicate: Bulkite

Sheet Porosity

TiSil vs. Bulkite

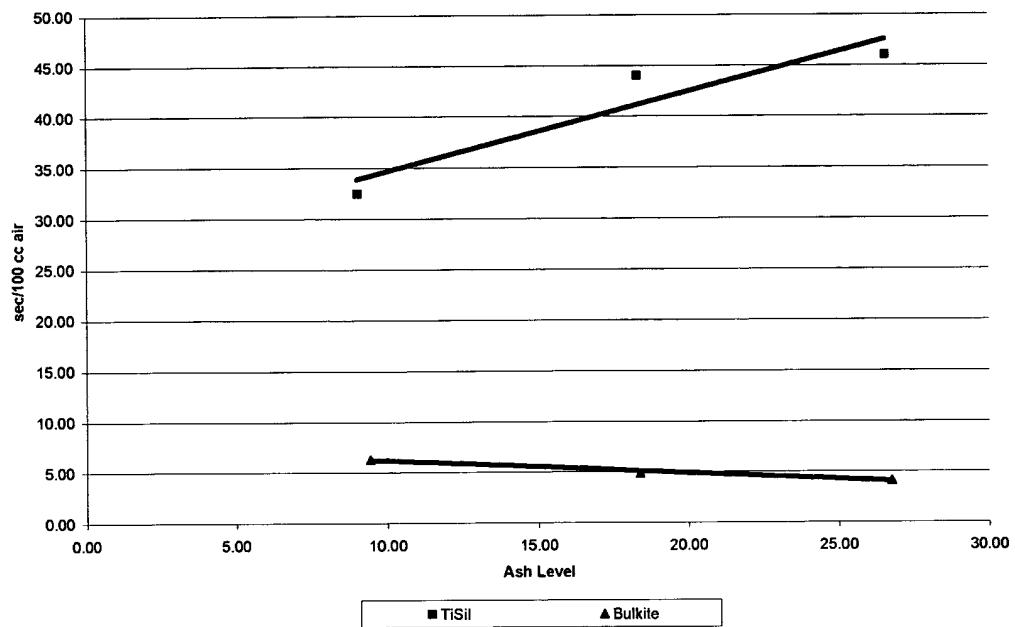


Fig 30: Sheet Porosity results for TiSil and Bulkite

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Normalized Sheet Opacity
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

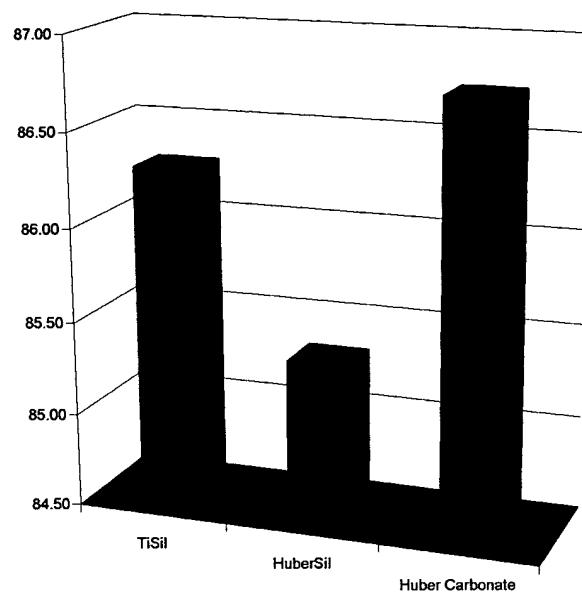


Fig 31: Normalized Sheet Opacity results for newsprint sheets containing various fillers, interpolated to 6% Ash.

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Sheet Ink Penetration
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

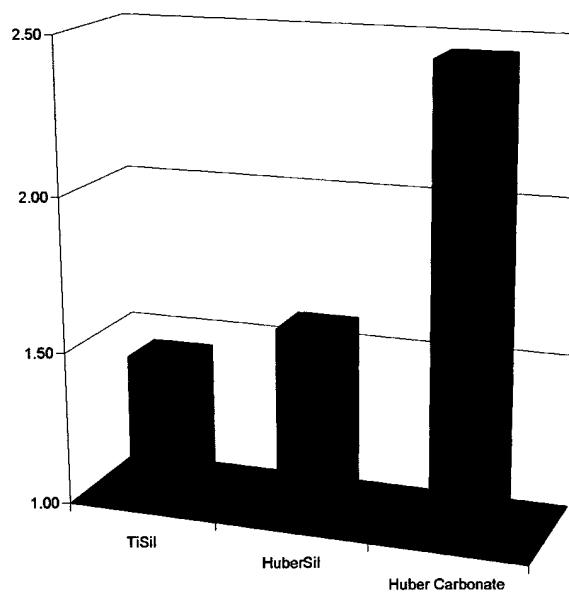


Fig 32: Sheet Ink Penetration results on newsprint sheets containing various fillers, interpolated to 6% Ash.

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

TiSil vs. HuberSil and Huber Carbonate

Sheet Show Through
 (Interpolated to 6% Filler)

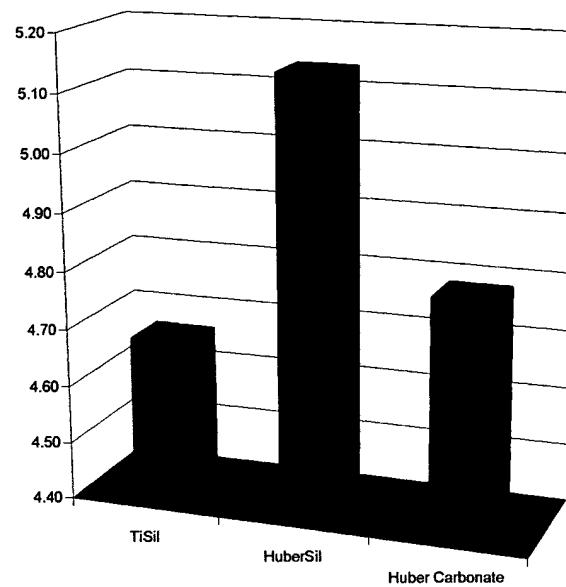


Fig 33: Sheet Show Through results on newsprint containing various fillers, interpolated to 6% Ash

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

TiSil vs. HuberSil and Huber Carbonate

Sheet Print Through
 (Interpolated to 6% Filler)

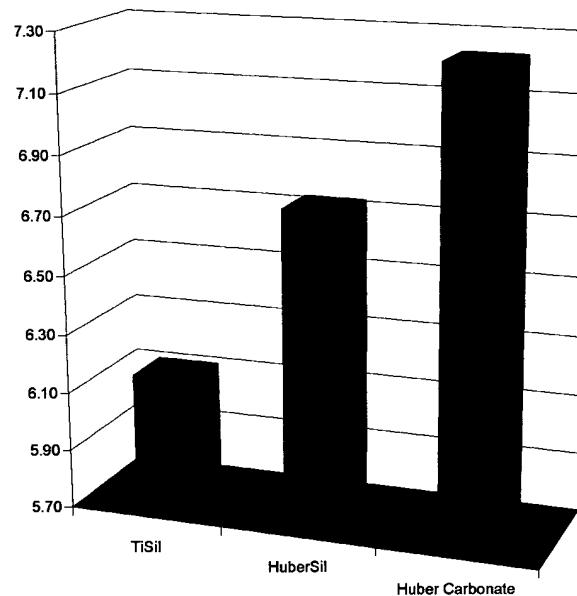


Fig. 34: Sheet Print Through results on newsprint sheets containing various fillers, interpolated to 6% Ash.

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Gurley Sheet Porosity
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

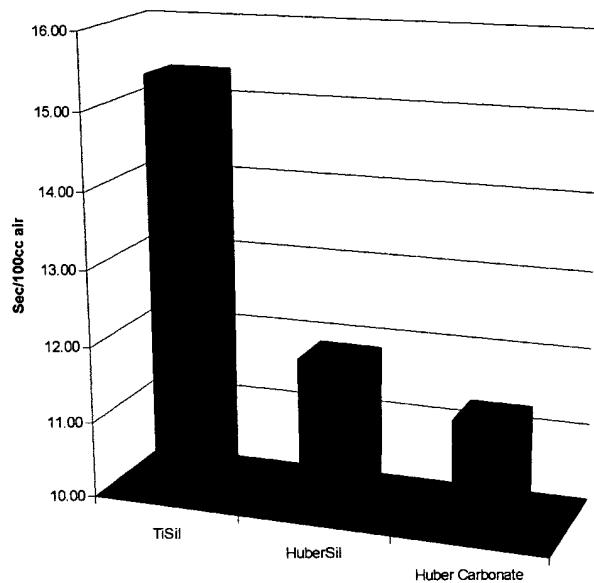


Fig 35: Gurley Sheet Porosity results for newsprint sheets containing various fillers, interpolated to 6% Ash

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Sheet Tensile Index
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

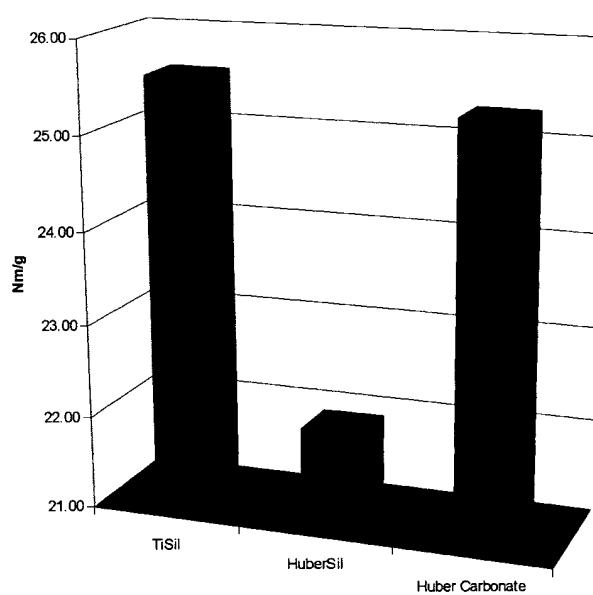


Fig 36: Sheet Tensile Index results for newsprint sheets containing various fillers, interpolated to 6% Ash

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Gurley Sheet Stiffness
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

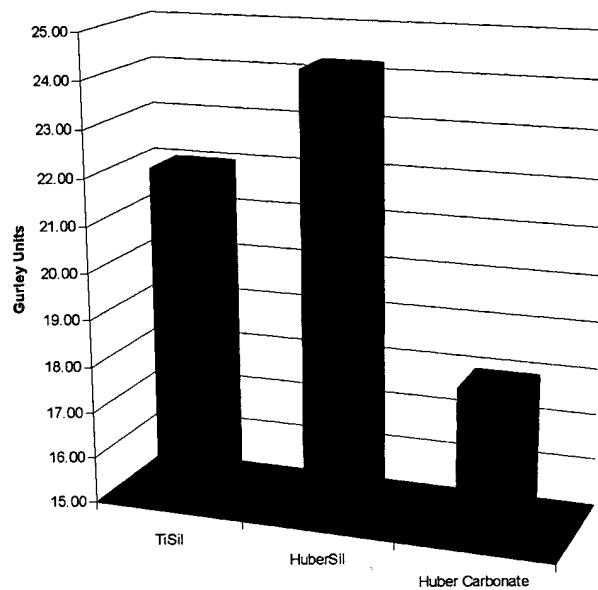


Fig 37: Gurley Sheet Stiffness results for newsprint sheets containing various fillers, interpolated to 6% Ash

Calcium Silicate Hydrate: TiSil
 Commercial Silicate: HuberSil
 Commercial Carbonate: Huber Carbonate

Sheet Static Coefficient of Friction
 (Interpolated to 6% Filler)

TiSil vs. HuberSil and Huber Carbonate

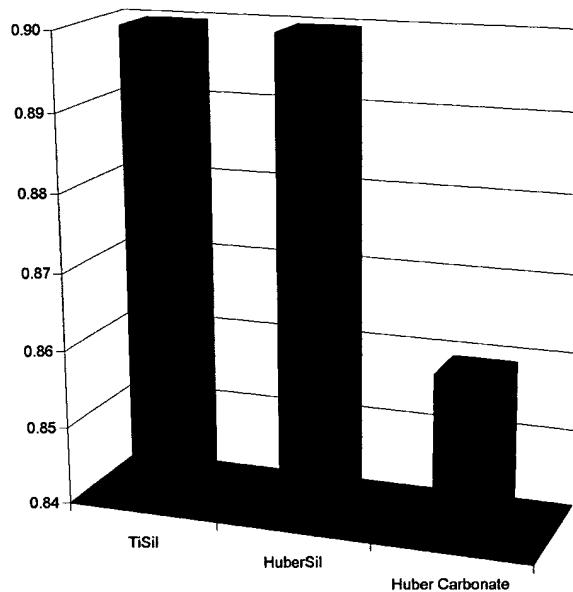


Fig 38: Sheet Static Coefficient of Friction results for newsprint sheets containing various fillers, interpolated to 6% Ash

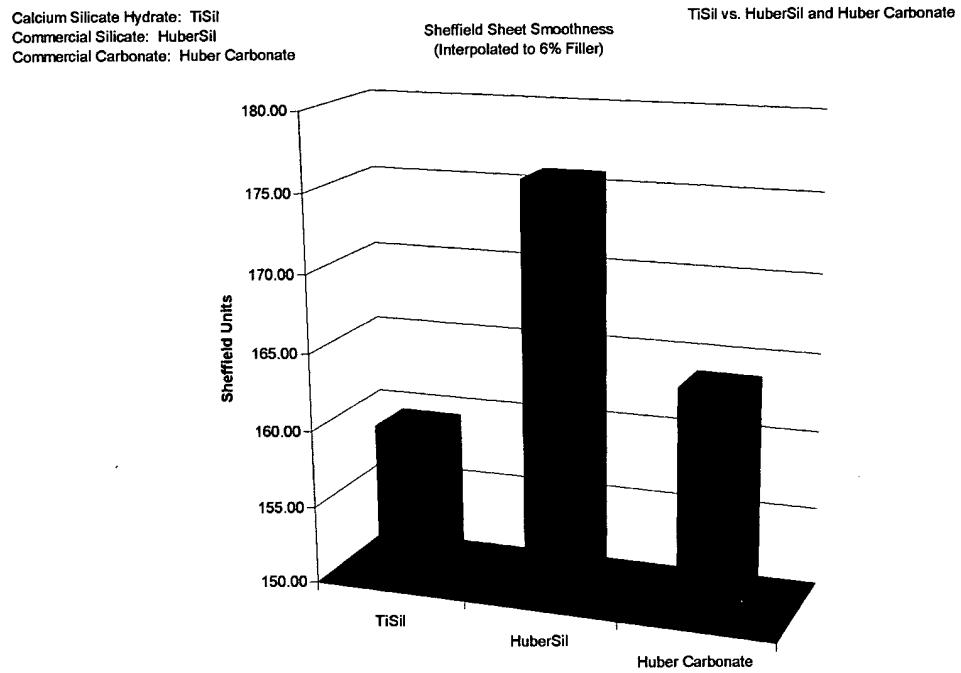


Fig 39: Sheffield Sheet Smoothness results for newsprint sheets containing various fillers, interpolated to 6% Ash.